

Claims

1. Multi-part piston (1) for an internal combustion engine
 - having an upper part (2) that has a piston crown (4), on which part a ring wall (6) having a ring belt (8) is molded on, and
 - having a lower part (3) that is connected with the upper part (2) by way of a screw connection (12, 24-31) and has pin bosses (17, 17') having pin bores (18, 18') on its lower side facing away from the upper part (2), and having piston skirt elements (21) connected with the pin bosses (17, 17'),

characterized in that

the screw connection consists of the following elements:

- of an essentially tube-shaped connection projection (24) that is affixed on the underside of the piston crown (4) and is disposed coaxial to the piston longitudinal axis (20), and has an outside thread (25) on its end that faces away from the piston crown (4) in the axial direction, which thread is disposed on a circumference side of the connection projection (24) that lies radially on the outside,
- of a support rib (12) molded onto the lower part (3), which rib has an inside thread (26) on its piston crown end, viewed in the axial direction, which thread is

disposed on a surface that lies radially on the inside,
and

- of an essentially tube-shaped intermediate sleeve (27) having a thread (28) that lies on the inside and a thread (29) that lies on the outside, by means of which the upper part (2) can be screwed together with the lower part (3), by way of the connection projection (24), and by way of the support rib (12), and which sleeve is configured in such a manner that when this happens, the connection projection (24) can be expanded and the intermediate sleeve (27) can be compressed.
2. Piston according to claim 1, **characterized in that** the thread (29) that lies on the outside is disposed on a circumference surface of the piston crown end of the intermediate sleeve (27), which surface lies radially on the outside, and fits into the inside thread (26) of the support rib (12), and that the thread (28) that lies on the inside is disposed on a surface of the intermediate sleeve (27), which surface lies radially on the inside, and fits onto the outside thread (25) of the connection projection (24).
3. Piston according to claim 2, **characterized in that** the axial distance between the inside thread (26) of the support rib (12) and the piston crown (4) is less than the axial distance between the outside thread (25) of the connection projection

(24) and the piston crown (4), and that the radial diameter of the inside thread (26) is greater than the radial diameter of the outside thread (25).

4. Piston according to one of the preceding claims, **characterized in that** the wall thickness of the connection projection (24) and that of the intermediate sleeve (27) are dimensioned in such a manner that when the upper part (2) is screwed together with the lower part (3), by way of the connection projection (24) and by way of the intermediate sleeve (27), the connection projection (24) can be expanded to such an extent, and the intermediate sleeve (27) can be compressed to such an extent that in this way, a mechanical stress that serves to fix the screw connection (12, 24-31) in place can be generated.
5. Piston according to one of the preceding claims, **characterized in that** the connection projection (24) has a screw flange (30) having the outside thread (25), on its end facing away from the piston crown (4), that the thread (28) that lies on the inside is disposed on the entire inside of the intermediate sleeve (27), and that the intermediate sleeve (27) has a screw flange (31) having the thread (29) that lies on the outside, on its end that faces the piston crown (4).